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Interest Groups and the Control of the Bureaucracy: An Agency Perspective on the Administrative Procedure Act

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INTEREST GROUPS AND THE CONTROL OF THE BUREAUCRACY: An Agency Perspective on The Administrative Procedure Act

by

Pablo T. Spiller and Santiago Urbiztondo*

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Abstract: This paper analyzes, in a multiple principals/agency framework, the implications, for agency behavior and control, of a major feature of the United States Administrative Procedure Act, namely, the promotion of interest groups' participation in regulatory proceedings. In our framework, the delegating parties, Congress and the president, cannot observe neither the state of nature, that impacts upon the productivity of the regulatory agency, nor the agency's effort level. As suggested by McCubbins and Schwartz (1984), the participation in the regulatory process allows the interest group-monitor to observe the state of nature (albeit imperfectly so), and hence signal its information to the delegating parties (as suggested by McCubbins and Schwartz (1984)). We show that if the interest group-monitor prefers outcomes associated, in expected sense, with high effort levels, then it may prefer to hide information about high productivity states of nature. Thus, the interest group-monitor may signal only "bad" states of nature (as in McCubbins and Schwartz's (1984) "fire alarms"). We find that a major role of interest group-monitors is to restrict the informational rents of the regulatory agency rather than to bias the outcome in the direction most preferred by the interest group. As a consequence, both principals may benefit from its participation. Our results, then, provide a formalization to McCubbins, Noll and Weingast's (1987) (1989) insight about the role of the Administrative Procedure Act in restricting agency discretion. Furthermore, we show that since collusion between the regulatory agency and an "interested" monitor is less feasible than with an "uninterested" or monitor, interest groups are more efficient monitors than "uninterested" ones. Finally, our model provides an informational rationale for allowing all types of interest groups to participate in regulatory proceedings - as is stipulated in the Administrative Procedure Act.

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1. Introduction.

Bureaucracies' managerial authority is delegated. Delegation, however, creates bureaucratic discretion, raising the need for control. Following the economic literature on principal-agent problems, the study of mechanisms to control bureaucracies has paid some attention to the imposition of penalties, rewards and ex-post monitoring. Ex-post control, however, may be costly to the delegator(s). Not only is monitoring costly, but the ability of carrying on scheduled penalties may be greatly reduced following bureaucratic noncompliance, as new constituencies mobilize to defend the new status quo. In other words, ex-post control is quite limited. This insight has been recognized in a series of important articles by McCubbins, Noll and Weingast (1987) and (1989) (MNW hereafter). Their insight is that limited ex-post control makes it optimal to set ex-ante constraints on the agency's decision making process. These constraints may take the form of particular procedural requirements, including provisions to allow interest groups to participate at regulatory proceedings. Through their participation at the hearing stage, interest groups may, as suggested in McCubbins and Schwartz (1984), behave as monitors. McCubbins and Schwartz's (1984) argument is that substantial congressional oversight is performed through interest groups who play the role of "fire alarms", and that this type of oversight is more efficient than regular monitoring, or "police patrols," as it allows members of congress to investigate issues of real concern to their constituents.[1]

In this paper we explore the MNW's (1987) (1989) insight, by modelling interest groups as monitors in a multiple-principals/single-agent model.[2] They argue that legal

[1] This does not imply that substantial direct congressional oversight is not undertaken. See, in particular, Aberbach (1990).

[2] The multiple principals-agency modelling approach we use here is related to that of Spiller and Urbiztondo (1991) and Urbiztondo (1991), where the behavior of the bureaucracy is the result of managerial authority delegated by members of Congress and the president. Those papers, though, neglect any direct participation by interest groups. In particular, Urbiztondo (1991) considers how cooperation among principals with opposed interests is facilitated by the use of a monitor. The monitor reduces their ability to compete

constraints imposed in the Administrative Procedure Act (APA) allow the president and Congress to overcome informational asymmetries vis-a-vis the bureaucracy.[3] In their own words, "Administrative procedures constitute an additional mechanism for achieving greater compliance. First, because they ameliorate the problem of asymmetric information, administrative procedures are a useful, cost-reducing supplement to methods for monitoring and punishing agencies. They reduce the informational costs of following agency activities and specially facilitate "fire-alarm" monitoring through constituencies affected by an agency's policies." (MNW (1987), page 273). We show that many of their implications can be derived from a multiple-principals model when principals have opposed interests. Furthermore, our framework provides new insights on the role of interest group-monitors that were not explicitly analyzed in the literature. These insights arise from analyzing the incentives for strategic behavior by interest groups, the interaction between ex-ante and ex-post monitoring, and the effect ex-ante monitoring by interest groups has on the different delegating parties (i.e. Congress and the president), issues that were left unexplored in MNW and McCubbins and Schwartz (1984).

We explicitly let the delegating parties be Congress and the president (who are assumed to have opposed interests), and analyze the difference between monitoring by interest groups or by "regular" (i.e. uninterested) monitors, while still allowing some (but not

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for the bureaucracy's favors, thus reducing the rents that the bureaucracy may extract. In that paper this role is performed by an "uninterested" monitor, e.g. the General Accounting Office, who audits ex-post the *behavior* of the regulatory agencies.

[3] The requirements of the APA can be summarized as follows (see MNW (1987)): 1) The agency must inform about the "intention" of a new policy; 2) Agencies must solicit "comments" by all interested parties; 3) Agencies must allow all parties to "participate" in the decisionmaking process; and 4) Agencies must deal explicitly with all the evidence presented to justify their decisions.

very powerful) ex-post control to the delegating parties.[4] Furthermore, we examine whether both Congress and the president benefit from interest groups monitoring ex-ante the bureaucracy even though the president's preferences may be opposed to those of the interest groups. Our comparison of interested and uninterested monitors provides new insights on their relative efficiency in performing ex-ante vis-a-vis ex-post monitoring. We find that while interest groups have a comparative advantage in ex-ante monitoring (i.e. providing information about the environment in which the agency works, and hece suggesting new regulatory policies resulting from changes in technology, markets or demands), they have no particular advantage in ex-post monitoring (i.e. in controlling what the agency actually did). Thus, our model predicts that most ex-post monitoring should be undertaken by "regular" monitoring agencies, like the Congressional Budget Office, the Office of Management and Budget, and the General Accounting Office.

We want to capture the participation of interest groups as monitors who audit the *environment* in which regulatory agencies act, and explore its implications.[5] Two main possible effects can arise from this monitoring effort: First, we want to examine whether the participation of interest groups whose preferences are aligned with those of Congress actually moves the outcome in Congress's direction. A second possible effect is that ex-ante monitoring by interest groups helps in restricting the rents extracted by the bureaucracy. Were this the only effect, then, the participation of interest groups would have to be

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[4] It can be easily shown that without some ex-post control, ex-ante constraints do not help. That is, even though MNW (1987) do not make it explicit, ex-ante constraints, i.e., requirements of due process, cannot affect the final outcome unless <u>some</u> authority is available to punish deviations from the status quo.

[5] We, therefore, do not consider other types of oversight, including the role performed by the Congressional Budget Office, the Bureau of the Budget, and oversight practiced by congressional committees. To the extent that these other overseers have internalized the preferences of the principals they are serving (which is most clearly the case of congressional committees), their strategic behavior will present some similarity to that of interest groups. We do not pursue this point here. See Aberbach (1990) for a description of congressional oversight performed by committees since the 1960s.

subsidized as they will not have the benefit of moving the outcome closer to their own ideal policy. Since Congress and the president are assumed to have opposed interests, would the interest groups be able to move the outcome substantially closer to their own (and Congress') most desired outcome, the president could be made worse off from the participation of interest groups in the regulatory process. On the other hand, if the main effect of interest group-monitoring is to reduce the rents extracted by the bureaucracy, then the president could also benefit from the participation of interest groups even if they were able to move the outcome, to some extent, towards their most desired direction.

We provide an example showing that, although the policies with an interest group-monitor are, in expected sense, closer to the ideal outcome of the monitor - assumed here to be also that of Congress - a major effect of the participation of interest groups is to reduce the rents of the bureaucracy, making both Congress and the president better off with interest group-monitors than without.[6] Finally, we also show that interest group-monitors are more efficient than standard (uninterested) monitors, particularly when interest groups with opposed interests can be simultaneously used as monitors.

Our model is related to recent research that has incorporated interest groups politics into an agency framework (see Laffont and Tirole (1988) and Spiller (1990)). These papers model the participation of interest groups either as direct principals of the regulatory agency (Spiller, 1990), or as affecting the information disclosed by such agency about the characteristics of a regulated firm (Laffont and Tirole, 1988). More precisely, Laffont and Tirole (1988) consider the participation of interest groups influencing the efficiency of regulation when a single principal (Congress) receives information about the agent (a firm) from a monitor (a regulatory agency). Among other results, they show that potential

[6] In this sense, contrasting with Laffont and Tirole (1988), interest groups can affect the outcome even when they want efficient regulation. Observe that the interest groups play here a different role than in Laffont and Tirole (1988), where they bribe the regulatory agency, a regular monitor, to hide information from Congress.

collusion between these interest groups (e.g., the firm and the environmentalists) and the regulatory agency affects the characteristics of the delegation of authority, and that an interest group is powerful only if it is interested in inefficient regulation (i.e., in inducing the regulatory agency to withhold information from Congress). In particular, consumer groups who want the agency to disclose information about "good" states of nature (i.e. states of nature that turn out to increase consumer's surplus) have no power in affecting the regulatory outcome, and, furthermore, do not increase social welfare (which is assumed to be Congress's objective function). We find that once interest groups are allowed to perform ex-ante monitoring activities, then the result of Laffont and Tirole (1988) concerning the inefficiency of (for example) consumer groups' monitoring is reversed.

2. The model.

There are two principals called C (for Congress) and P (for president), one interest group-monitor called M, and one agent called A, all assumed to be risk-neutral. The policy outcome is a random variable x, which can take values $\{x_L,x_h\}$ with $x_L<x_h$. Congress, the president and the interest group-monitor are assumed to have preferences over the outcomes. In particular, we will assume that Congress and the president have opposed interests, so that C prefers a high outcome while P would prefer a low one.[7] An impartial - or regular- monitor (as in Urbiztondo (1991)) is one that has no preferences over outcomes. Interest groups, though, have preferences over outcomes, making them different from standard monitors. In general we will assume that M's preferences are aligned with, but not necessarily identical to, those of C. We model this by allowing their utility functions to be given by:

[7] We assume here that the agency has no direct preferences over outcomes. Observe, however, that since we assume that the agency has disutility of effort, unless it is motivated, its revealed preferences would be aligned with those of the president.

$U_C=ax-T_c(x,r)-S_c(r),$ $a>0,\ T_c(x,r)\geq 0,\ S_c(r)\geq 0$

$U_P=bx-T_p(x,r)-S_p(r),$ $b<0,\ T_p(x,r)\geq 0,\ S_p(r)\geq 0$

$U_M=mx+S_c(r)+S_p(r)-c_s$, and $m>0,\ c_s\geq 0$

$U_A=V(T_c(x,r)+T_p(x,r))-e,$ $V'(.)>0,\ V''(.)=0,\ U_A^*>0$

where a is the marginal utility C receives from the policy outcome $x\in\{x_L,x_h\}$, b is the marginal disutility P receives from x,[8] m is the marginal utility M receives from x, r is the interest group-monitor revelation of the state of nature, and U_A^* is the agent's reservation utility level. The policy outcome x results from the effort, e, taken by the agent and the workings of nature. To look at the differences between ex-ante monitoring and ex-post control, we let the action taken by the agent, e, be unobserved by all parties (C, P and M). Thus, ex-post control cannot be based on what the agency did, but rather on what the outcome actually was *and* what the monitor revealed ex-ante. The workings of nature is modelled as a multiplicative random shock θ, such that the probability of outcome x_h is a random variable $\Pi(e)=Pr(x=x_h/e,\theta)=\theta g(e)$ that depends on the agent's effort level (e) and the realization of θ.[9] Ex-post control is modelled as contingent transfers that both C and P will make after observing the outcome. We model limited ex-post control by not allowing C and P to impose unbounded penalties on the agent.[10] In particular, we allow only non-

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[8] We assume that $a>|b|$. This is a necessary assumption to make effort positive. We assume that the principals cannot vertically integrate (a sufficient condition that generates this constraint is that side payments between the principals can only be effected at the beginning of the contract, before the outcome is observed). Vertical integration would take the following form: C offers P a side payment of $-bx+B$, where B is a positive constant that results from a bargaining game; this would leave P indifferent about the final outcome and C would have marginal utility equal to $a+b$, where $a>a+b>0$.

[9] Note the θ affects the marginal productivity of effort. Notice also that the range of e has to satisfy $g(e)\leq 1/\bar{\theta}$, where $\bar{\theta}$ is the highest value θ can possibly take.

[10] Ex-post control is also limited in our model because transfers cannot depend on claims the agent might attempt to make after observing the state of nature and choosing and action. This prevents the principals from trying to extract the agent's information through the use of an incentive compatible contract. See footnote 17 below.

negative transfers. Thus, $T_c(x,r)$ and $T_p(x,r)$ represent the transfers C and P (respectively) offer A as a result of x and the report r by the monitor.[11] As we show below, the participation of the interest group as a monitor is not assured without transfers. First, participation in regulatory proceedings is expensive. Call that cost c_g. Second, since the interest group is interested in high policy outcomes, it might find it optimal to strategically withhold information from C and P. In particular, without further incentives, the interest group-monitor would not report information that makes the policy further away from its most desired outcome. This does not mean, however, that all information that benefits Congress is released, as the interest group-monitor cares about the final outcome, but it does not internalize Congress's expenditures in reaching that outcome. Congress and the president, then, would have to pay for information that hurts the interest group-monitor. C and P, however, may not want to offer those transfers, and hence some information may not be revealed by the interest group. Let $S_c(r)$ and $S_p(r)$ represent the transfer C and P offer M in exchange of the information r respectively.[12,13]

The random shock $\theta \in [\underline{\theta},\overline{\theta}]$ is assumed to arise from two possible distributions, each being equally likely. These are:

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[11] Note that without the assumption that transfers are non-negative, the principal wanting a low outcome could always offer a transfer negative enough as to induce nonparticipation by the agent. While here we model transfers as monetary (i.e. through the budgetary process), Congress and the president have many other instruments to reward or punish agencies. Commissioners may be promoted to better agency positions (i.e. you may be promoted from an obscure agency, like the FTC, to a very visible position at OMB, or your term may be allowed to expire without being reappointed or promoted), or regulatory powers may be withdrawn, or whole agencies may be eliminated.

[12] To abbreviate notation, we denote $T_c^L(r)$ ($T_c^h(r)$) the transfer offered by C for a low (high) outcome given the report r. $T_p^L(r)$ and $T_p^h(r)$ are similarly defined for P. Notice that the report r is the same to both principals. This assumption captures restrictions of ex parte communication in section 5(c) of the APA. Furthermore, only "evidence" brought to the hearing stage needs to be explicitly considered by the agencies to justify their decisions, which means that all the information that is revealed has to be publicly announced, i.e., the report to both principals cannot be different.

[13] These payments may take the form of presidential favors for the organization of the interest group, tax breaks, public recognition, etc.

1) $f^h(\theta)=2(\theta-\underline{\theta})/(\overline{\theta}-\underline{\theta})^2$,

2) $f^L(\theta)=2(\overline{\theta}-\theta)/(\overline{\theta}-\underline{\theta})^2$.

These two distributions, then, represent two different expected productivities, a high productivity state, h, and a low productivity one, L. We define, then, the expected agent productivities as $\omega^h=E(\theta/f^h)=(\underline{\theta}+2\overline{\theta})/3$ and $\omega^L=E(\theta/f^L)=(2\underline{\theta}+\overline{\theta})/3$ depending on whether the state of nature $f^h(\theta)$ or $f^L(\theta)$ occur. In particular, $\omega^h>\omega^L$. We denote, then, the expected probability of outcome x_h when the effort taken is e and $f^j(\theta)$ is known as $\pi_j(e)=\omega^j g(e)$, where $e\in[e_L,e_h]$, $\pi'_j(e)>0$ and $\pi''_j(e)<0$, for j=L,h. Finally, the report of the interest group-monitor is $r\in\{s(\theta),\phi\}$, where $s(\theta)\in\{f(\theta),\phi\}$ is the signal received by M and ϕ is the empty set.[14] Let $p_{s\theta}/2$ denote the probability that the signal $s(\theta)=f^j(\theta)$, j=L,h, is received, with $p_{s\phi}$ being the complementary probability that $s(\theta)=\phi$, i.e., $p_{s\theta}+p_{s\phi}=1$.[15]

To model ex-ante monitoring versus ex-post control, we let the agent learn $f^j(\theta)$ before e is chosen, but after the transfers are offered.[16] In the absence of a monitor, whether interested or regular, C and P do not know which distribution is the true one. They make offers, then, knowing only that e comes with equal probability from $f(\theta)=f^L(\theta)$ and from $f(\theta)=f^h(\theta)$. The only way C and P can obtain this information (with probability $p_{s\theta}$) is from the monitor. Since the monitor we consider here cares about the final outcome (M prefers a high outcome), he will always report the signal if such reporting will imply

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[14] Note that information is hard, i.e., if $n(\theta)$ is reported to either principal, the report must be correct. This is an important assumption, as it avoids the need to respect incentive constraints on the monitor's disclosure of information. Indeed, this type of information is required in section 7(c) of the APA, as "the proponent of a rule or order shall have the burden of proof".

[15] We follow Tirole (1986) here by letting the signal be exogenous.

[16] This assumption avoids the extraction of the agent's information through the use of an incentive compatible contract in which the agent has the incentive to disclose the information she has about the true state of nature. The justification for its use in the context of bureaucratic control is that regulatory agencies learn more about the environment, i.e., about the regulated market, after regulation takes place. This information, though, is readily available to the firms, i.e., the interest groups who behave as monitors. See also footnote 10 above.

that $(T^h_c - T^L_p)$ would increase.[17]

We show below that this is the case when $s(\theta)=f^L(\theta)$. By reporting $f^L(\theta)$, M gets C and P to adjust their transfers such that the equilibrium outcome moves closer to C and M's ideal policy outcome. On the other hand, for M to provide a signal that induces a reduction in $(T^h_c - T^L_p)$, C and P (or either one of them) must compensate M for its consequent utility loss. We show below that such is the case when $s(\theta)=f^h(\theta)$. Depending on the relative intensity of the preferences of M, C and P, and on the ability of C and P to coordinate their rewards, the signal $s(\theta)=f^h(\theta)$ may or not be reported.

The two principals are assumed to make simultaneous moves. Therefore, the timing of the model is as follows: M receives the signal $s(\theta)$; C and P pay M the rewards $S_c(r)$ and $S_p(r)$ for its report r;[18] C and P offer contingent transfers $T_c(x,r)$ and $T_p(x,r)$ to the agency; A observes $f(\theta)$ and chooses its effort e; outcome x is observed; finally, transfers $T_c(x,r)$ and $T_p(x,r)$ are effected. The timing is summarized in the following diagram.

M receives s
⇓
C and P buy r
⇓
C and P offer transfers
⇓
A observes $f^j(\theta)$ and chooses e
⇓
Outcome x is observed
⇓
Transfers are effected

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[17] We are disregarding here potential collusion between the agent and the monitor. McCubbins et al. (1987, page 262) argue that APA rules against ex parte contact prevent this from happening (see also section 5(c) of the APA). In any event, assuming that the interest the monitor has about the outcome outweighs the agent's utility derived from informational rents eliminates the possibility of collusion. Observe that if the monitor was a regular one, then collusion between agent and monitor could be feasible and would have to be analyzed (this would result in an additional -and costly- incentive compatibility constraint to satisfy). We refer to this case in sections 6 and 7.

[18] We let S(r)=0 for $r=\phi$. Accordingly, if neither C nor P buys the signal we say that they bought the signal ϕ at zero price.

Thus, letting $(1-\pi_j(e))$ be the expected probability of a low outcome given the level of effort e under distribution $f^j(\theta)$, for j=L,h, the expected utilities once C and P obtained M's report are given by

$$EU_C = (1-\pi_r(e^r))[ax_L-T_c^L(r)]+\pi_r(e^r)[ax_h-T_c^h(r)]-S_c(r),^{19}\ r=L,j,\phi;$$

$$EU_P = (1-\pi_r(e^r))[bx_L-T_p^L(r)]+\pi_r(e^r)[bx_h-T_p^h(r)]-S_p(r),\ r=L,j,\phi;$$

$$EU_{M_j} = (1-\pi_j(e^j))mx_L+\pi_j(e^j)mx_h+S_c(r)+S_p(r)-c_s,^{20}\ j=L,h,\phi,\ r=L,h,\phi;\ \text{and}$$

$$EU_{A_j} = (1-\pi_j(e^j))[V(T_c^L(r)+T_p^L(r))]+\pi_j(e^j)[V(T_c^h(r)+T_p^h(r))]-e^j,\ j=L,h,\ r=L,h,\phi.$$

We assume the cost of the signal received by the monitor can take two values: $c_s=0$, in which case his participation takes place, or $c_s>>0$, in which case he does not engage in monitoring activities and the game is played by two equally (un)informed principals. Note that the principal who prefers higher to lower output levels, C, has to satisfy the agent's individual rationality constraint (IRCA) by himself, even for $T_p^L=0$.[21]

Note that if the information received by the interest group-monitor is about the effort put forth by the agency, that is, its activity consists on ex-post monitoring, its preferences about the outcome are irrelevant. Once the outcome has occurred, the monitor's (whether interested or uninterested) best strategy is to report any signal received provided that a compensation is offered for it. This compensation is, in equilibrium, only a function of the agency's potential loss from the release of the information rather than of the

[19] $\pi_r(e^r)$ is the probability of a high outcome according to r. If $r=\phi$, we define $\pi_\phi(e^\phi)$ as $(\pi_L(e^L)+\pi_h(e^h))/2$, where e^j is the level of effort chosen by the agent having the information that $\pi(e)=\pi_j(e)$, for j=L,h.

[20] If $s(\theta)=\phi$, the monitor expects effort to come from $(\pi_L(e^L)+\pi_h(e^h))/2$, where e^j is the effort level that is implemented when $\pi(e)=\pi_j$, for j=L,h. To abbreviate notation, and when no confusion is created, we refer to this probability as $\pi_\phi(e)$.

[21] Since transfers have to be nonnegative, $T_p^h=0$ in equilibrium, since P makes his offer disregarding the IRCA.

monitor's preferences.[22] Interest groups, then, are not more efficient than "regular" monitoring agencies in performing ex-post monitoring. In what follows, then, we focus on cases where the information received by the monitor is about the realization of the random shock of nature θ, prior to the action taken by the agent.

3. Monitoring activity is not economically available.

To explore the role of the interest group-monitor, we first analyze the game when only limited ex-post control is available. This can be understood as the case when the cost of organizing the interest group and of participating in the regulatory proceedings are so high that its participation is not worthwhile, i.e., $c_g>>0$. The purpose of this section is to derive a benchmark case against which the use of interest groups as monitors can be compared.

Without ex-ante monitoring, the sequence of the game is reduced to four stages: first, the principals independently offer the agent transfers $T_c(x)$ and $T_p(x)$; second, the agent observes $f(\theta)$ and chooses an action e; then, outcome x is revealed, and finally, transfers are effected. Also, since C wants a high outcome, P wants a low outcome, and the transfers have to be nonnegative, we obtain that $T_c^L=T_p^h=0$.[23] Thus,

$$EU_C = (1-(\pi_L(e^L)+\pi_h(e^h))/2)ax_L+((\pi_L(e^L)+\pi_h(e^h))/2)[ax_h-T_c^h(\phi)],$$

$$EU_P = ((\pi_L(e^L)+\pi_h(e^h))/2)bx_h+(1-(\pi_L(e^L)+\pi_h(e^h))/2)[bx_L-T_p^L(\phi)], \text{ and}$$

$$EU_A = \sum_{j=L,h} [(1-\pi_j(e^j))V(T_p^L(\phi))+\pi_j(e^j)V(T_c^h(\phi))-e^j]/2.$$

We make two additional assumptions about the distribution functions for all realizations of

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22 See Urbiztondo (1991) for an analysis of ex-post monitoring with multiple principals.

23 We assume here that $T_c^L=0$ although it could be positive in general. This implicitly assumes that the IRCA is satisfied with pure incentive considerations. Accordingly, we disregard the IRCA in what follows.

θ. These are:

Assumption 1: $\pi'(e)/(1-\pi(e))$, i.e., the hazard rate, increases with e, i.e., $-\pi''(e)(1-\pi(e))<\pi'(e)^2$.[24]

Assumption 2: $-\pi''(e)/\pi'(e)$ decreases with e, but not "too fast", i.e., $2\geq(\pi'(e)\pi'''(e)/\pi''(e)^2)\geq 1$.[25]

Therefore, given the information available to the principals, C and P's problems are respectively given by

$$\max EU_C \text{ with respect to } e^j \text{ and } T_c^h(\phi) \text{ subject to}$$
$$e^{j*} = \text{argmax } EU_A(e/f^j(\theta)),\ T_p^{L*}(\phi) \text{ and } EU_A \geq U_A^*,$$

and

$$\max\ EU_P \text{ with respect to } e^j \text{ and } T_p^L(\phi) \text{ subject to}$$
$$e^{j*} = \text{argmax } EU_A(e/f^j(\theta)) \text{ and } T_c^{h*}(\phi) \text{ for } j=L,h.$$

Each of the first two constraints in both problems is in fact a continuum of constraints. Using the first order approach to the principal-agent problem,[26] we can replace each of these incentive constraints by $\pi'_j(e^j)[V(T_c^h)-V(T_p^L)=1$.[27] Furthermore, we assume that the agent's individual rationality constraint (IRCA) is not binding. Thus, the

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[24] This assumption is standard in the information literature. It basically says that given that a high outcome has not occurred, increasing effort makes its appearance each time more likely. It is respected by many distributions, in particular by $\Pi(e)=\theta(2-e^{-1})$ (where $e\in(1/2,1)$ for $\theta\in(0,1]$).

[25] This assumption is satisfied by the density function referred to in the previous footnote.

[26] The functions $U_A(.)$ and $\pi(.)$ are chosen so that the use of this approach is valid here. See Rogerson (1985) for a discussion of the conditions that make the use of the first-order approach valid.

[27] Note that an interior solution requires $T_c^h>T_p^L$. This is assumed to be the case throughout the paper.

solution to C and P's problems are given by Lemma 1 below:

Lemma 1: Assuming that IRCA is not binding, the solution to C's problem is given by

$$e^{j}:\ \pi_j'(e^{j*})[a(x_h - x_L) - T_c^h(\phi)] + \lambda_c^j \Delta V(\phi)\pi_j''(e^{j*}) = 0$$

$$T_c^h(\phi):\ -\left[\frac{\pi_L(e^{L*}) + \pi_h(e^{h*})}{2}\right] + \sum_{j=L,h} \frac{\lambda_c^j \pi_j'(e^{j*}) V'(T_c^h(\phi))}{2} = 0$$

$$\lambda_c^j:\ \pi_j'(e^{j*})\Delta V(\phi) - 1 = 0, \quad j=L,h,$$

and the solution to P's problem is given by

$$e^{j}:\ -\pi_j'(e^{j*})[b(x_L - x_h) - T_p^L(\phi)] + \lambda_p^j \Delta V(\phi)\pi_j''(e^{j*}) = 0$$

$$T_p^L(\phi):\ -\left[1 - \frac{\pi_L(e^{L*}) + \pi_h(e^{h*})}{2}\right] - \sum_{j=L,h} \frac{\lambda_p^j \pi_j'(e^{j*}) V'(T_p^L(\phi))}{2} = 0$$

$$\lambda_p^j:\ \pi_j'(e^{j*})\Delta V(\phi) - 1 = 0, \quad j=L,h,$$

where e^{j*} is level of effort under $\pi(e)=\pi_j(e)$, $\Delta V(\phi)=[V(T_c^h(\phi))-V(T_p^L(\phi))]$, and λ_c^j and λ_p^j are the Lagrangean multipliers associated with the agent's incentive constraint when $\pi(e)=\pi_j(e)$.[28]

Summing up, when a monitor is not available the equilibrium expected level of effort is $e^{\phi*}=(e^{h*}+e^{L*})/2$, where e^{j*}, $j=L,h$, comes from $\pi_j'(e^{j*})\Delta V(\phi)=1$.[29] Therefore, since, $\pi_h' > \pi_L'$ and $\pi''<0$, $e^{h*}>e^{L*}$, which in turn implies that $e^{h*}>e^{\phi*}>e^{L*}$. Thus we can state:

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[28] The proof is straightforward and is not presented here. Assumptions 1 and 2 guarantee that the second order condition for a maximum is satisfied (see section 4 below).

[29] In the following sections we refer to $e^{\phi*}$ as the level of effort that results when the density function $\pi_\phi(e)$, although this density function does not exist.

Proposition 1: When the marginal productivity of effort is lower (higher) than expected, the implemented level of effort when the two principals are equally uninformed results in the implementation of a lower (higher) level of effort than the expected level.

The intuition behind the Proposition is clear. A higher marginal productivity of effort implies that a given outcome can be achieved with a lower marginal disutility of effort. Thus, when the agent is more productive than expected, transfers end up being too high because the principals think that the marginal cost of inducing effort is relatively high, which in turn results in the implementation of a higher than expected level of effort.

In the following section we analyze the benefits of using an interest group-monitor.

4. Monitoring activity is economically available.

Suppose a monitor is available, i.e., $c_s=0$. Let us first analyze which signals will be reported by the monitor if neither C nor P are willing to pay for the information. Since C and P are always equally informed, we have to analyze the joint reaction of the principals to the information disclosed. We perform this analysis by assuming that Congress and the president have perfect information about the expected productivity of the agent (i.e., they know $f^j(\theta)$, and therefore $\omega_j=E(\theta|f^j)$, and letting their transfers to the agency react to changes in this information.

Notice first that, from Lemma 1, the equilibrium is characterized by the following system of equations

$$-\pi_j(e^j) - \frac{\pi_j'(e^j)^2\left[a(x_h-x_L)-T_c^h(j)\right]V'(T_c^h(j))}{\pi_j''(e^j)\left[V(T_c^h(j))-V(T_p^L(j))\right]} - 0$$

$$-\left(1-\pi_j(e^j)\right) - \frac{\pi_j'(e^j)^2\left[b(x_L-x_h)-T_p^L(j)\right]V'(T_p^L(j))}{\pi_j''(e^j)\left[V(T_c^h(j))-V(T_p^L(j))\right]} = 0$$

$$\pi_j'(e^j)\left[V(T_c^h(j))-V(T_p^L(j))\right] - 1 = 0, \quad for\, j=L,h.$$

The first equation results from C's problem (combining the first order conditions with respect to e and T_c^h), the second equation is similarly obtained from P's problem and the last one is the (common) first order condition with respect to the Lagrange multiplier (i.e., ICC_A). Totally differentiating the system above, recalling that $\pi_j=\omega_j g(e^j)$, allowing ω_j to increase exogenously, and eliminating for notational simplicity the argument e, and the subscripts and superscripts j, we obtain the following system:

$$\left[-\pi' + \frac{\pi\pi''}{\pi'}\left(2-\frac{\pi'\pi'''}{\pi''^2}\right)\right]de + \left[\frac{-\pi'^2V'(T_c^h)}{\pi''\Delta V}\left(\frac{\pi\pi''}{\pi'^2}-1\right)\right]dT_c^h + \frac{\pi V'(T_c^h)}{\Delta V}dT_p^L = 0$$

$$\left[\pi' + \frac{(1-\pi)\pi''}{\pi'}\left(2-\frac{\pi'\pi'''}{\pi''^2}\right)\right]de - \frac{(1-\pi)V'(T_p^L)}{\Delta V}dT_c^h + \left[\frac{\pi'^2V'(T_p^L)}{\pi''\Delta V}\left(1+\frac{(1-\pi)\pi''}{\pi'^2}\right)\right]dT_p^L = 0$$

$$\pi''\Delta V de + \pi'V'(T_c^h)dT_c^h - \pi'V'(T_p^L)dT_p^L = -g'(e)\Delta V d\omega.$$

Note that assumptions 1 and 2 assure that the first term of the first (second) equation above is negative (positive). Then, it is easy to check that the determinant (Δ) is negative and that $\partial e^*/\partial\omega>0$. Also,

$$\frac{\partial T_c^h}{\partial\omega} = \frac{g'V'}{\Delta}\left[-\pi'\left(\frac{\pi'^2}{\pi''}+1\right) + \pi\pi''\left(2-\frac{\pi'\pi'''}{\pi''^2}\right)\right],$$

and

$$\frac{\partial T_p^L}{\partial\omega} = \frac{g'V'}{\Delta}\left[\pi'\left(\frac{\pi'^2}{\pi''}-1\right) + (1-\pi)\pi''\left(2-\frac{\pi'\pi'''}{\pi''^2}\right)\right].$$

These two equations show how marginal changes in the agent's productivity affect C and P's optimal transfers. The sign of these equations, however, is generally undetermined. Nevertheless, a sufficient (but by no means necessary) condition for $\partial(T_c^h - T_p^L)/\partial\omega < 0$ is that $\pi(e) \geq 1/2$.[30] Assume that this is the case. Then, the equilibrium level of effort implemented as the agent becomes more productive increases even though the net incentive received decreases. Thus we can state:

Lemma 2: If C and P are informed of ω, then, as long as $\pi(e) \geq 1/2$ or $\pi(e) = \omega(2-e^{-1})$, exogenously increasing ω will reduce the net incentive transfer $(T_c^h - T_p^L)$ and increase the agent's equilibrium effort.

Therefore, if it depends on M to inform C and P about the true state of the world, M's optimal report strategy (absent direct monetary rewards) is to only disclose information about low productivity states, and withhold information about high productivity ones, i.e., about $f^h(\theta)$. Thus, we can state:

Proposition 2: When the interest group-monitor observes $f^L(\theta)$, it discloses the information. On the other hand, if it observes $f^h(\theta)$, it prefers to hide the information.

In other words, even though e^* increases with the agent's expected productivity, M would not inform C and P about an increase in ω, since this implies a decrease in $(T_c^h - T_p^L)$ that partially offsets the positive effect of a high productivity shock. Therefore, if left alone, M would only report bad productivity shocks, i.e., $f(\theta) = f^L(\theta)$. That is, the interest group-monitor would only inform C and P about a lower than expected productivity of the agent. This triggers a joint reaction by C and P that partially offsets the decrease in the

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[30] If $\pi(e) = \omega(2-e^{-1})$, then $\partial T_p^L/\partial\omega > 0$ and $\partial(T_c^h - T_p^L)/\partial\omega < 0$ for all $\pi(e) \geq 0$.

implemented e* that would have resulted if such a report was not provided.[31] As a consequence, the optimal strategy for both C and P is to offer nothing for that report.[32] On the other hand, for the interest group-monitor to report its information $s(\theta)=f^h(\theta)$, it would require C and/or P to provide it with positive payments.

Proposition 2, then, replicates McCubbins and Schwartz's (1984) "fire alarm" strategies. Interest groups would contact Congress only when in the absence of their information the agency would take an action that would make the interest group (and Congress) worse off.

The next section analyzes the incentives for C and P to compensate the interest group-monitor for a signal $f^h(\theta)$, and the resulting informational structures.

5. Alternative informational structures.

Suppose that the monitor receives a signal and does not transmit it. Then the signal cannot be $f(\theta)=f^L(\theta)$. It can either be ϕ or $f^h(\theta)$. Thus, using Bayes's Rule and the fact that -before any signal is received- the probability that $f(\theta)=f^h(\theta)$ is the same as the probability that $f(\theta)=f^L(\theta)$, i.e., 1/2, C and P know that $f(\theta)=f^h(\theta)$ with probability $1/(2-p_{s\theta})$, which is higher than 1/2, and $f(\theta)=f^L(\theta)$ with probability $(1-p_{s\theta})/(2-p_{s\theta})$.[33] Then, as a result of the updated expectations, the principals believe that the agent is more productive than what they would have believed had there not been an interest group-monitor, but less than if it would have actually reported $f^h(\theta)$. That is, $\omega^h>\omega^u>\omega^\phi$. Observe, however, that if the

[31] It can be shown from Lemma 1 that if the monitor could make exclusive reports to either Congress or the president, the incentives would be the same as with a common report. This is because T_c^h (T_p^L) decreases (increases) with ω, which induces M to withhold signals $s(\theta)=f^h(\theta)$. Furthermore, note that if this was possible, P would still benefit if C obtains an exclusive signal $f^h(\theta)$, as this information results in the implementation of a lower level of effort, whereas, for the opposite reason, C is harmed if P obtains an exclusive signal.

[32] Thus, if $s(\theta)=f^L(\theta)$, then $r=s(\theta)$, and $S_c(f^L(\theta))=S_p(f^L(\theta))=0$.

[33] If the report $r=f^L(\theta)$ is not received free of charge the updated expected density function is given by $f^u(\theta)=[1/(2-p_{s\theta})]f^h(\theta)+[(1-p_{s\theta})/(2-p_{s\theta})]f^L(\theta)$.

monitor was a regular monitor, then such conclusion would be unwarranted. Notice, furthermore, that even if none of the principals were willing to pay to obtain the signal $s(\theta)=f^h(\theta)$, the mere presence of the monitor may still be beneficial as it reduces (although does not eliminate) the asymmetry of information. As a consequence, both principals could benefit from the existence of an interested monitor. On the one hand, the reduction in the asymmetry of information tends to reduce the agent's informational rent. This effect is beneficial for both principals. On the other hand, the presence of an interested monitor may move the outcome in the monitor's most preferred direction. This may benefit Congress but damage the president. For both principals to benefit, the former effect has to be the dominant one. In section 7 we present an example where this is precisely the case.

We now compute the necessary transfers that induce the interest group-monitor to disclose its information $s(\theta)=f^h(\theta)$. First, we note that the expected loss of utility suffered by the monitor from reporting $f(\theta)=f^h(\theta)$ is given by $m[\pi_h(e^{h^*}/T_c^h(f^u),T_p^L(f^u))-\pi_h(e^{h^*}/T_c^h(f^h),T_p^L(f^h))]$, where f^u denotes the updated density distribution of θ believed by C and P after a report $r=\phi$. Since $(T_c^h-T_p^L)$ decreases with ω, the effort implemented after the report $r=f^h(\theta)$ is released is lower than if $s(\theta)=\phi$ is reported, and therefore the term in brackets is positive. Then, a signal $s(\theta)=f^h(\theta)$ will only be released if the rewards offered by C and P are such that

$$S_c(f^h(\theta))+S_p(f^h(\theta)) \geq m[\pi_h(e^{h^*}/T_c^h(f^u),T_p^L(f^u))-\pi_h(e^{h^*}/T_c^h(f^h),T_p^L(f^f))].$$

This being the case, the game is then played by two principals equally informed, both of whom benefit from the availability of the monitor. Notice though that a free rider problem arises here and difficulties in coordinating their rewards to the monitor may leave the principals uninformed even though sharing the cost would make the (joint) acquisition of the signal profitable. We illustrate this alternative with an example in section 7.

6. Collusion between the agent and the interest group-monitor.

Monitoring by a single interest group

In previous sections we explored the role of an interest group-monitor as one that provides ex-ante information to the principals about states of nature. So far, we have assumed that the agent could not collude with the monitor to hide the information received. We now relax this assumption and analyze the incentives for collusion between the agent and the interest group-monitor.

We deal with two cases: first, when the agent prefers the principals to believe she has a low productivity; and second, when she prefers to be seen as a high productivity agent.

When the agent wants the principals to believe her productivity is low, no collusion would result in low states, since both the agent and the monitor benefit from making that information public. When the interest group-monitor observes $f^h(\theta)$, however, neither the agent nor the interest group wants to report it. Would C and P want to extract that information from the interest group-monitor, they would have to pay M the combined loss of utility that both the monitor and the agent would suffer from the report. Otherwise, collusion between the agent and the monitor would prevent the report from taking place. Observe that if M was an uninterested monitor, collusion could be avoided by simply paying the monitor the agent's direct utility loss from the report. Thus, using an interest group-monitor is less efficient. This is simply because getting information from a monitor is more difficult when that information hurts him.

Consider, on the other hand, the case when the agent wants to be considered highly productive (we show below that such circumsntances can arise with multiple principals). She will try to compensate the interest group-monitor for not disclosing information about low states of nature. Since an interested monitor intrinsically benefits from disclosure of this information, collusion is less feasible than it would be if the monitor were a regular one. Since avoiding collusion between the monitor and the agent is usually costly to the

principals, interest groups-monitors are, in this case, more efficient than regular monitors.

Monitoring by multiple interest groups with opposed preferences

If, however, interest group-monitors with opposed preferences are available, then the principals will always have, at least, one monitor that wants to release its information freely.[34] Thus, the possible collusion between interest group-monitors and the agent discussed above is ameliorated. To see this, observe that with two interest group-monitors of opposed preferences, the cost of preventing collusion equals the maximum of zero and the difference between the agent's utility loss and the relevant interest group's gains. If the monitor was an "uninterested" one, however, the cost of preventing collusion would equal the agent's utility loss. Thus, the costs of preventing collusion now, are much lower than if the monitor was an uninterested one. Furthermore, since the information the principals obtain from multiple interest group-monitors is the same as with an "uninterested" monitor, the expected outcome and agency effort under the two types of monitors are the same.

This discussion, then, provides a different rationale for McCubbins and Schwartz's (1984) idea that "fire-alarms" are more efficient than "police-patrols," as well as for the APA allowing multiple interest groups participating in regulatory proceedings.

To summarize, we have shown so far that the relative efficiency of a single interest group-monitor vis-a-vis a single "uninterested" monitor depends on the nature of the agent's preferences about the revelation of its type, and on the actual signal received. These qualifications, however, are irrelevant when multiple interest group-monitors with opposed interests are willing to participate. In this case we have shown that if information gathering costs are zero, then interest group-monitoring is more efficient than regular monitoring, the cost to the principals of preventing collusion between the agent and the

[34] Interest group-monitors will always release freely $s(\theta)=\phi$, as no principal would pay for it.

monitors is substantially lower when the monitors are interest groups rather than "uninterested" agents.

We state these results in Lemma 3:

Lemma 3: When multiple interest groups with opposed preferences participate as ex-ante monitors, then the principals' information, as well as the expected outcome and agency effort is the same as if monitoring was performed by an "uninterested" monitor. Furthermore, the cost of preventing collusion is lower when monitoring is performed by interest groups.

If monitoring costs (c_g) are positive, however, not only the participation of interest groups as monitors has to be subsidized,[35] but the existence of multiple interest group-monitors implies duplication of monitoring costs. In our single dimensional framework, however, the principals will not subsidize the participation of more than two interest groups with opposed interests, as such structure would provide the principals with as much information as the monitors are able to obtain. Thus, to the extent that the gains from participation for each interest group are at least half of its own monitoring costs,[36] then the participation cost of the two interest groups-monitoring for the principals is lower than if there was only a single "uninterested" monitor. Otherwise, there would be a tradeoff between extracting informational rents and promoting the participation of multiple interest group-monitors.

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[35] Since with multiple interest group-monitors the principals never pay directly for the interest groups' information (assuming that collusion between the agency and the relevant interest groups is not feasible), the interest groups cannot recover their monitoring costs. They would be willing to participate only if their direct utility benefit from moving the regulatory outcome closer to their ideal one exceeds their costs of monitoring.

[36] That is, as long as the principals' total costs of subsidizing interest groups does not exceed c_g.

We state this result in the following Proposition:

Proposition 3: If $c_s=0$, then the use of multiple interest group-monitors of opposed interests is more efficient than the use of "uninterested" monitors. If $c_s>0$, then, the relative efficiency of the different monitoring schemes depends on the gains to the interest groups obtained from participating as monitors.

Since, as we showed in section 2, interest groups are not more efficient than "regular" monitors in performing ex-post monitoring activities, but they are in performing ex-ante monitoring, we can state the following Corollary:

Corollary 1: Ex-ante monitoring of regulatory agencies should be performed mostly by interested parties, while ex-post monitoring could be performed by either interested or "uninterested" monitors.

The agent's signaling incentives

We show now that with multiple principals, there are cases where the agent actually wants to be considered of high (rather than low) productivity. As discussed above, this consideration is relevant to ascertain the relative efficiency of interest group-monitoring.

We proceed by assuming that the agent has the information about the state of nature and she herself has to report it to the principals. Let the agent's report be denoted by ω^k, where k=L,h, and consider the expected utility of the agent when she reports ω^k and the true distribution is $f^j(\theta)$. The agent's expected utility is given by

$$EU_A(\omega^k/f^j(\theta)) = \pi_j\left(e^{j*}(T_c^h(\omega^k), T_p^L(\omega^k))\right)V(T_c^h(\omega^k)) +$$

$$\left(1-\pi_j\left(e^{j*}(T_c^h(\omega^k), T_p^L(\omega^k))\right)\right)V(T_p^L(\omega^k)) - e^{j*}(T_c^h(\omega^k), T_p^L(\omega^k)); \quad j=L,h.$$

Differentiation with respect to the report ω^k results in

$$\frac{\partial EU_A}{\partial \omega^k} = \left[\frac{\partial e^{j*}}{\partial T_c^h}\frac{\partial T_c^h}{\partial \omega^k} + \frac{\partial e^{j*}}{\partial T_p^L}\frac{\partial T_p^L}{\partial \omega^k}\right]\left(\pi_j'(e^{j*})\Delta V(\omega^k) - 1\right) +$$

$$\left[\pi_j(e^{j*})\frac{\partial T_c^h}{\partial \omega^k} + (1-\pi_j(e^{j*}))\frac{\partial T_p^L}{\partial \omega^k}\right]V'(\omega^k),$$

which evaluated at k=j reduces to

$$\frac{\partial EU_A(\omega^j/f^j(\theta))}{\partial \omega^j} = \left[\pi_j(e^{j*})\frac{\partial T_c^h}{\partial \omega^j} + (1-\pi_j(e^{j*}))\frac{\partial T_p^L}{\partial \omega^j}\right]V'(\omega^j). \tag{3}$$

If equation (3) is negative, then the agent is better off claiming $\omega^k<\omega^j$, that is, the agent wants the principals to believe her productivity is the lowest possible one.[37] Observe, however, the sign of the expression in (3) may not be negative with multiple principals. The reason is that C may increase his transfer for a high outcome when the agent becomes more productive because P increases his. The aggregate reactions from the two principals have to be computed to weight the benefit and the cost of misreporting in either direction. This calculation is in general undetermined. Nevertheless, if $\pi(e)=\omega(2-e^{-1})$ for $\theta\in(0,1]$ and $e\in(1/2,1)$, equation (3) is positive. Thus we can state:

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[37] Note that if there is a single principal (who wants a high outcome, of course), we would have

$$\frac{\partial EU_A(\omega^j/f^j(\theta))}{\partial \omega^j} = \pi_j(e^{j*})\frac{\partial T_c^h}{\partial \omega^j}V'(\omega^j) < 0,$$

since T_c^h is a negative function of ω^j. (The derivation of this result follows from the solution to C's problem in Lemma 1.) That is, the agent wants to be taken as less efficient in environments with a single principal.

Lemma 3: If $\pi(e)=\omega(2-e^{-1})$, then the agent wants the principals to believe $f(\theta)=f^h(\theta)$.

That is, if the expected productivity of the agent is given by $\pi(e) = \omega(2-e^{-1})$, then she wants to be taken as the most efficient one, i.e., if $f(\theta)=f^L(\theta)$ the agent has an incentive to lie and tell $f(\theta)=f^h(\theta)$. This implies that the agent has an incentive to bribe the monitor to withhold a signal demonstrating that $f(\theta)=f^L(\theta)$. Incentive compatibility then requires that, if necessary, the monitor should be rewarded by the principals for reporting that kind of signal. Since an interest group-monitor who prefers high outcomes intrinsically benefits from such a report, the necessary reward is lower (or, even zero) than that required to make the contract collusion-free if the monitor was a regular one.

7. An example.

In this section we illustrate our results by means of an example. Let the model of section 2 take the following parametric values: a=20, b=10, $x_h=1$, $x_L=0$, V(T)=T/10, $\underline{\theta}=2/3$, $\overline{\theta}=1$, $p_{s\theta}=.5$ and $\pi(e)=\omega(2-e^{-1})$ for $e\in(0,1)$. Then, $\omega^h=8/9$ and $\omega^L=7/9$.

Denote e^e the expected level of effort. Then, the different information structures result in the equilibria below:[38]

	without monitor	with complete information	with regular monitor	with IG-M: f^h is not bought	with multiple IG-Ms
e^e	.779363	.781274	.780319	.780330	.780319
EU_C	4.8984	4.946788	4.78011	4.918568	4.92259
EU_P	-7.80036	-7.69067	-7.8880	-7.76131	-7.74552
EU_A	.10944	.092775	.101107	.103323	.101107
EU_C+EU_P	-2.90196	-2.7439	-3.1079	-2.8427	-2.8229

[38] The equilibria implicitly assume that an interest group-monitor cannot be bribed by the agent to hide information from the principals. As noted before, this is quite natural and it only requires that the interest group has a big stake at regulation, i.e., that m>>0.

As we can see, C and P always benefit from the availability of an interest group-monitor (other things constant - i.e., transfers to M), even though the interest group-monitor is able to bind the outcome closer to its most preferred policy. Note also that if the monitor is uninterested about the outcome -a regular monitor-, the cost of making the contract agent-monitor collusion proof requires that the principals pay M the money equivalent of the agent's utility loss when information about her productivity is released. As we showed to be the case in the previous section, the agent is willing to "bribe" the monitor to withhold information about $f^L(\theta)$, and is willing to pay up to (the money equivalent of) the loss in her expected utility in such a case. This amount is equal to 1.13987 (and it is expected to occur with probability $p_{s\theta}/2$), making the aggregate (net) utility of C and P become -3.1079.[39] Since the aggregate utility without a monitor is equal to -2.9019, a regular monitor is not economical. That is, only interest group-monitors can be used.

Note, furthermore, that if in addition to the interest group-monitor we have been considering, there is also another interest group-monitor that prefers low outcomes (and hence would freely disclose information about high states of the nature), the principals would obtain all the information received by each interest group-monitor. This would render an equilibrium equal to that with a regular monitor but without subtracting from the payoffs of the principals the rewards necessary to make the contract agent-monitor collusion proof. Inspection of this alternative shows that having multiple interest group-monitors with opposed interests available is the best alternative when there is asymmetric information.

Finally, compare the equilibrium in which the principals obtain the information $f^h(\theta)$ (prior to the rewards to the monitor, as it can be understood looking at the equilibrium with multiple interest groups-monitors) with that in which the signal $f^h(\theta)$ is

[39] EU_C and EU_P with a regular monitor in the chart are calculated assuming that this cost is divided equally between the principals.

not obtained. We can see, then, that C is willing to pay up to .004022 and P is willing to pay up to .01579 for the report $f^h(\theta)$ (equal to the increase in EU_C and EU_P respectively). Noticing that the expected change in the probability of a high outcome, given that $f(\theta)=f^h(\theta)$ has occurred, and the report was obtained is equal to -.0110633, we can see that C is capable of buying such a report (profitably) without the cooperation of P only if the marginal utility of the monitor, i.e., m, is less than .3635. Similarly, P could obtain the report without C's help only if m is less than 1.427. Then, if m is less than .3635 it can be the case that either C or P alone pays the full reward, or that C and P pay part of the reward each. The (Nash) equilibrium results unavoidably in the acquisition of the signal f^h. Furthermore, if m is higher than 1.427 but less than 1.79 it is still feasible for both principals to jointly obtain such report. Nevertheless, if the principals cannot coordinate their transfers, the Nash equilibrium could now be that none of them obtains the reward, resulting in a lost opportunity. If m is higher than 1.79, the signal $s(\theta)=f^h(\theta)$ will not be bought as the maximum the principals are (jointly) willing to pay is always less than the minimum M is willing to accept.

8. Final comments.

Recently, it has been suggested that the legal procedural requirements arising from the Administrative Procedure Act (APA) allow the president and Congress to overcome informational asymmetries with respect to the bureaucracy. This paper provides a multiple-principals/single-agent model that explores the interaction between ex-ante monitoring and ex-post control. We show that allowing interest groups (which we model as interested monitors) to participate at the hearing stages, as provided for by the APA, helps the president and Congress to deal with a type of asymmetric information that ex-post monitoring cannot overcome. We show that there is a basic advantage to using interest groups rather than uninterested monitors: Even if the cost they incur in collecting

information is the same, interest group-monitors are less prone to collusion with the agency than regular monitors are. In other words, making a contract agent-monitor collusion free is cheaper when the monitor has an intrinsic disutility from collusion. The effect of having interest groups behaving as monitors is twofold: First, interest group-monitors may have an impact on the final outcome. This effect, though, is lessened because the principals adjust their expectations based on the interest group's revelations. A more powerful effect, though, is that the interest group-monitor serves to reduce the rents of the agent. Since the information freely obtained by the principals increases when there are various interests groups who disclose information in strategically opposed directions, a more general prediction of our model is that we should not observe restrictions to the participation of interest groups at the hearing stage, i.e., the APA should -as it does in section 6(a)- allow participation of multiple interest groups, i.e., consumers, environmentalists, firms, and other affected parties. Finally, while the policy outcome that arises with multiple interest group-monitors is the same as with a single "uninterested" ex-ante monitor, the agency is able to extract much less rents when it is monitored by interest groups. Thus, when considering ex-ante monitoring, both Congress and the president would prefer interest groups over "regular" monitors, independently of what the interest groups' preferences are.

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